

EMC Test Report

For

Test Standards	:	EN 55032:2015+A1:2020+A11:2020 EN 55035:2017+A11:2020
Product Description	:	TRAVEL PLUG WITH 4 USB PORT
Tested Model	:	TC17, P820.373
Brand Name	:	 
Report No.	:	HUT220323610ER
Tested Date	:	Mar 23, 2022 to Mar 28, 2022
Issued Date	:	Mar 28, 2022
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Note: This report is considered invalidated without the Special Seal for Inspection of the HUT. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of HUT, this test report shall not be copied except in full and published as advertisement.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information		
Applicant	:	
Address of applicant	:	
Manufacturer	:	
Address of manufacturer	:	

General Description of EUT		
Product Name	:	TRAVEL PLUG WITH 4 USB PORT
Trade Name	:	 
Model No	:	TC17
Adding Model(s)	:	P820.373
<i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model TC17, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>		

Technical Characteristics of EUT		
Rated Voltage	:	AC 100-240V
Rated Current	:	≤340mA
Rated Power	:	15.5W
Highest Internal Frequency	:	Below 108MHz
Classification of Equipment	:	Class B

1.2 Test Standards

The tests were performed according to following standards:

EN 55032:2015+A1:2020+A11:2020: Electromagnetic compatibility of multimedia equipment - Emission requirements.

EN 55035:2017+A11:2020: Electromagnetic compatibility of multimedia equipment - Immunity requirements.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with the standards EN55032 and EN55035 for electromagnetic compatibility of multimedia equipment, and all related testing and measurement techniques intentional standards.

1.4 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List			
Test Mode	Description	Remark	Power Supply Mode
TM1	Charging	/	/

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Charging Cable	/	/	/
IPhone	/	/	/

1.5 Performance Criteria for EMS

All the test data has been collected, reduced, and analyzed within this report in accordance with Immunity requires the following as specific performance criteria:

- A. The apparatus shall continue to operate as intended during and after the test. The manufacturer specifies some minimum performance level. The performance level may be specified by the manufacturer as a permissible loss of performance.
- B. The apparatus shall continue to operate as intended after the test. This indicates that the EUT does not need to function at normal performance levels during the test, but must recover. Again some minimal performance is defined by the manufacture. No change in operating state or loss or data is permitted.
- C. Temporary loss of function is allowed. Operation of the EUT may stop as long as it is either automatically reset or can be manually restored by operation of the controls.

1.6 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal. Date	Due. Date
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2021-04-30	2022-04-29
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2021-04-30	2022-04-29
Amplifier	Agilent	8447F	3113A06717	2021-04-30	2022-04-29
Amplifier	C&D	PAP-1G18	2002	2021-04-30	2022-04-29
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-05-05	2022-05-04
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-05-05	2022-05-04
Horn Antenna	ETS	3117	00086197	2021-05-05	2022-05-04
Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-05-05	2022-05-04
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2021-04-30	2022-04-29
EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2021-04-30	2022-04-29
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2021-04-30	2022-04-29
AC LISN	Schwarz beck	NSLK8126	8126-224	2021-04-30	2022-04-29
8-WIRE LISN	Schwarz beck	8158	CAT3-8158-0059	2021-04-30	2022-04-29
8-WIRE LISN	Schwarz beck	8158	CAT5-8158-0117	2021-04-30	2022-04-29
PMF Generator	LIONCEL	PMF-801C-C	0171101	2021-04-30	2022-04-29
PMF Antenna	LIONCEL	PMF-801C-A	0180302	2021-04-30	2022-04-29
Instantaneous PMF Generator Module	LIONCEL	PMF-801C-T	0171001	2021-04-30	2022-04-29
Digital Power Analyzer	California Instrument	CTS	72831	2021-04-30	2022-04-29
Power Source	California Instrument	5001IX-CTS-400	25965	2021-04-30	2022-04-29
ESD Generator	LIONCEL	ESD-203B	0170901	2021-05-05	2022-05-04
Amplifier	Agilent	8447D	2944A10179	2021-05-05	2022-05-04
Transient 2000	EMC PARTNER	TRA2000	863	2021-05-05	2022-05-04
Couple Clamp	EMC PARTNER	CN-EFT1000	513	2021-05-05	2022-05-04
CS Immunity Tester	SCHAFFNER	NSG2070	1123	2021-05-05	2022-05-04
Attenuator	EMTEST	MA-5100/6BF2	1009	2021-05-05	2022-05-04
CDN	Luthi	L-801M2/M3	2665	2021-05-05	2022-05-04
Signal Generator	R&S	SMB100A	105942	2021-05-05	2022-05-04
Power Meter	R&S	NRP2	102031	2021-05-05	2022-05-04
RF Power Amplifier	BONN Elektronik	BLWA0830-160/100/40D	128740	2021-05-05	2022-05-04
RF Power Amplifier	NJNT	NTWPAS-2560025	2560025	2021-05-05	2022-05-04
Antenna	SCHWARZBECK	STLP9128D	043	2022-03-11	2023-03-10
Antenna	SCHWARZBECK	BBHA 9120 D	667	2022-03-11	2023-03-10
CS Generator	MARCONI	2024	112260/042	2022-03-11	2023-03-10
Attenuator	FRANKONIA	75-A-FFN-06	1001698	2022-03-11	2023-03-10

EM Injection Clamp	FCC	F-203I-23mm	91536	2022-03-11	2023-03-10
RF POWER AMPLIFIER	FRANKONIA	FLL-75	102A1109	2022-03-11	2023-03-10

2. SUMMARY OF TEST RESULTS

Standards	Description of Test Item	Result
EN 55032	Conducted Emission	Compliant
	Radiated Emission	Compliant
EN 61000-3-2	Harmonic Current Emission	N/A
EN 61000-3-3	Voltage Fluctuation and Flicker	N/A
EN 55035	Electrostatic Discharge Immunity in accordance with EN 61000-4-2	Compliant
	Continuous RF electromagnetic field Disturbances Immunity in accordance with EN 61000-4-3	Compliant
	Electrical Fast Transient/Burst Immunity in accordance with EN 61000-4-4	Compliant
	Surges Immunity in accordance with EN 61000-4-5	Compliant
	Continuous induced RF disturbances Immunity in accordance with EN 61000-4-6	Compliant
	Power-frequency Magnetic Fields Immunity in accordance with IEC 61000-4-8	Compliant
	Voltage Dips/Interruptions Immunity in accordance with EN 61000-4-11	N/A
	Broadband impulse noise disturbances, repetitive	N/A
	Broadband impulse noise disturbances, isolated	N/A

N/A: not applicable

3. Conducted Emission

3.1 Measurement Uncertainty

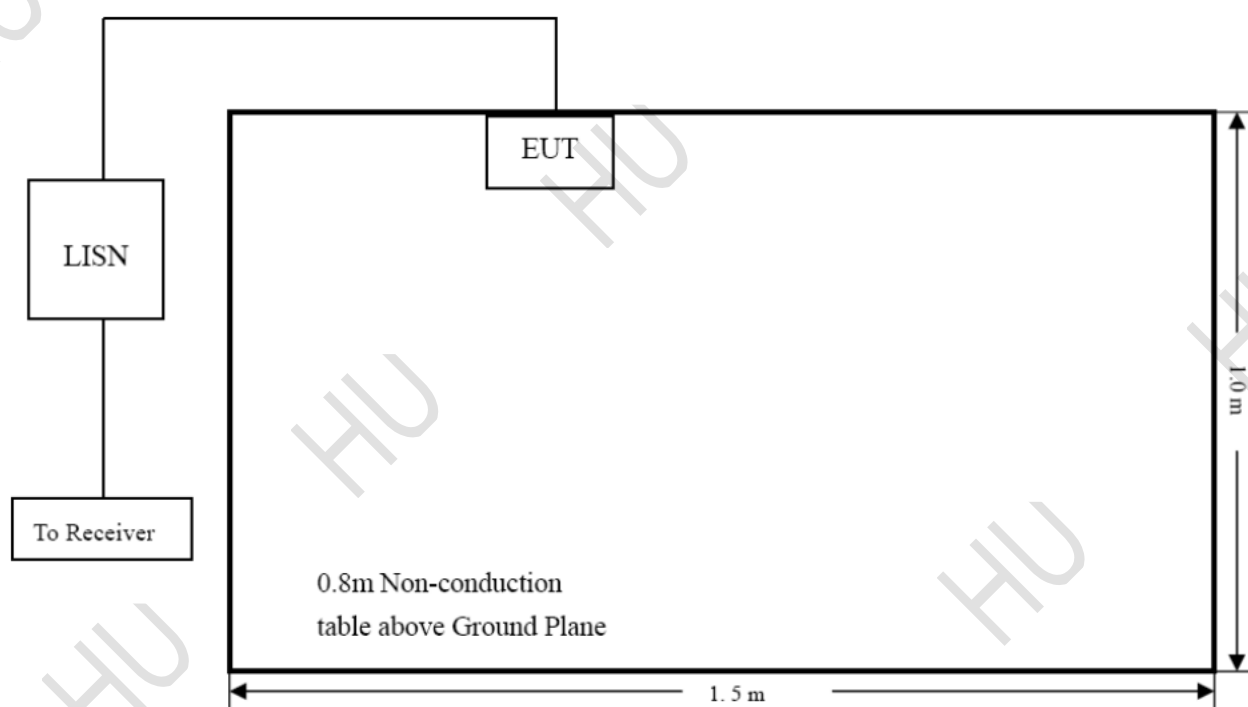
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement:

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz ± 3.74 dB
		0.15-30MHz ± 3.34 dB

3.2 Test Procedure

Test is conducting under the description of EN55032 Annex A.3.5.

3.3 Basic Test Setup Block Diagram



3.4 Environmental Conditions

Temperature:	24 ° C
Relative Humidity:	55 %
ATM Pressure:	1015 mbar

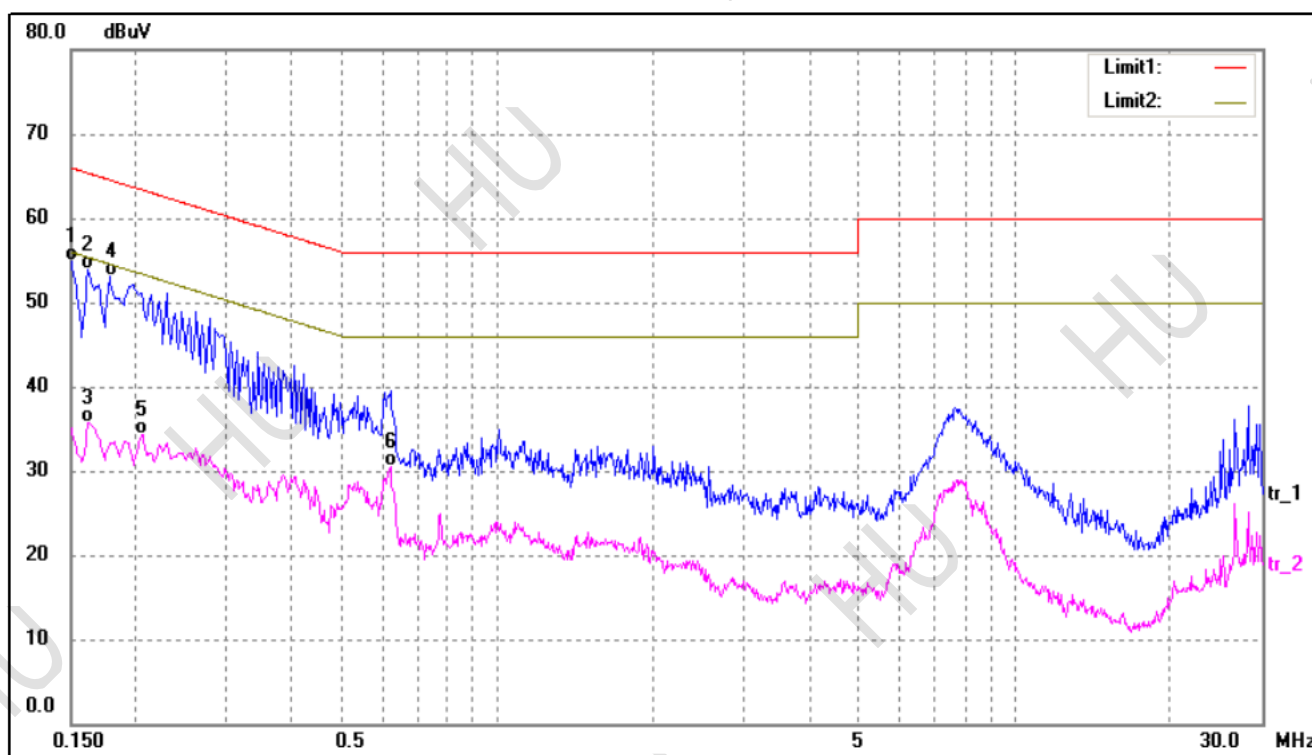
3.5 Summary of Test Results/Plots

According to the data in section 3.6, the EUT complied with the EN55032 conducted margin for a Class B device, with the *worst* margin reading of:

-11.11 dB at 0.1500 MHz in the Line mode, QP detector, 0.15-30 MHz

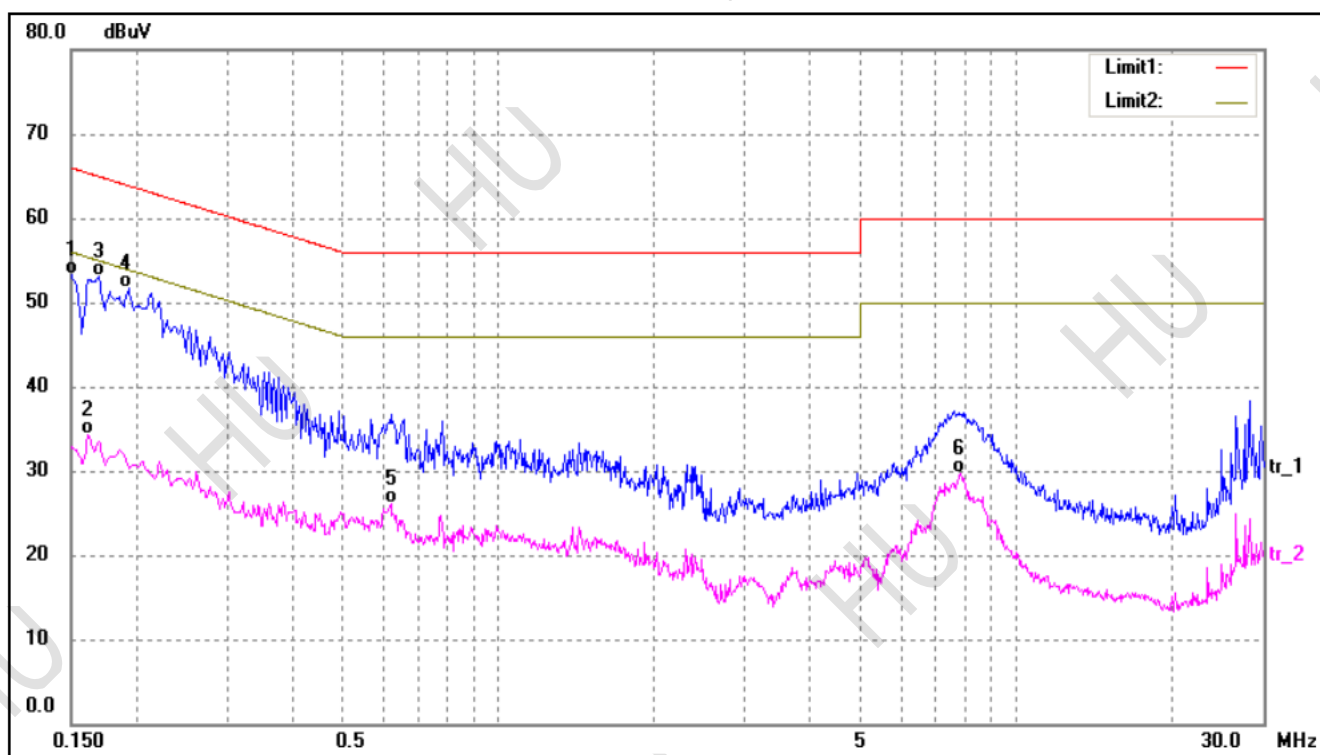
3.6 Conducted Emissions Test Data

Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1500	44.94	9.95	54.89	66.00	-11.11	QP
2	0.1620	43.89	9.95	53.84	65.36	-11.52	QP
3	0.1620	25.83	9.95	35.78	55.36	-19.58	AVG
4	0.1780	43.09	9.96	53.05	64.58	-11.53	QP
5	0.2060	24.30	9.97	34.27	53.37	-19.10	AVG
6	0.6220	20.47	10.05	30.52	46.00	-15.48	AVG

Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	43.31	9.95	53.26	66.00	-12.74	QP
2	0.1620	24.26	9.95	34.21	55.36	-21.15	AVG
3*	0.1700	43.18	9.95	53.13	64.96	-11.83	QP
4	0.1940	41.76	9.97	51.73	63.86	-12.13	QP
5	0.6220	16.08	10.05	26.13	46.00	-19.87	AVG
6	7.8340	19.13	10.52	29.65	50.00	-20.35	AVG

4. Radiated Emission

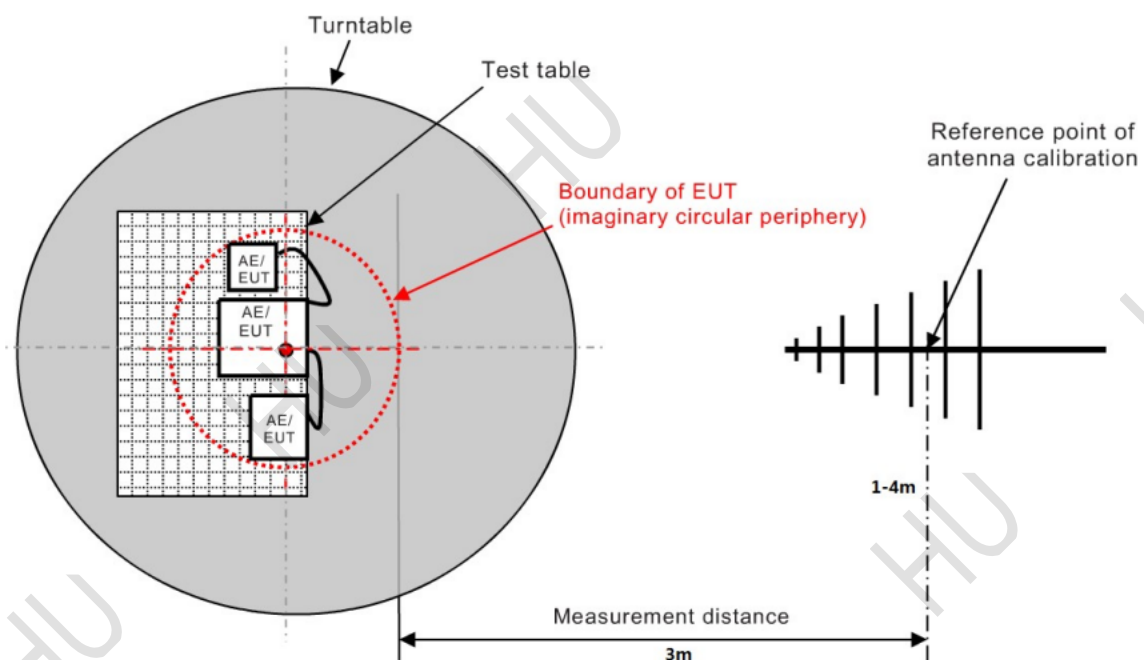
4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement:

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Radiated Emissions	Radiated	30-200MHz $\pm 4.52\text{dB}$
		0.2-1GHz $\pm 5.56\text{dB}$
		1-6GHz $\pm 3.84\text{dB}$
		6-18GHz $\pm 3.92\text{dB}$

4.2 Test Procedure

Test is conducting under the description of EN55032 Annex C.2.2.4



4.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\begin{aligned}\text{Corr. Ampl.} &= \text{Indicated Reading} + \text{Correct} \\ \text{Correct} &= \text{Ant.Factor} + \text{Cable Loss} - \text{Ampl.Gain}\end{aligned}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{EN55032 Class B Limit}$$

4.4 Environmental Conditions

Temperature:	24° C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

According to the data in section 4.5, the EUT complied with the EN55032 Class B standards, and had the worst margin is:

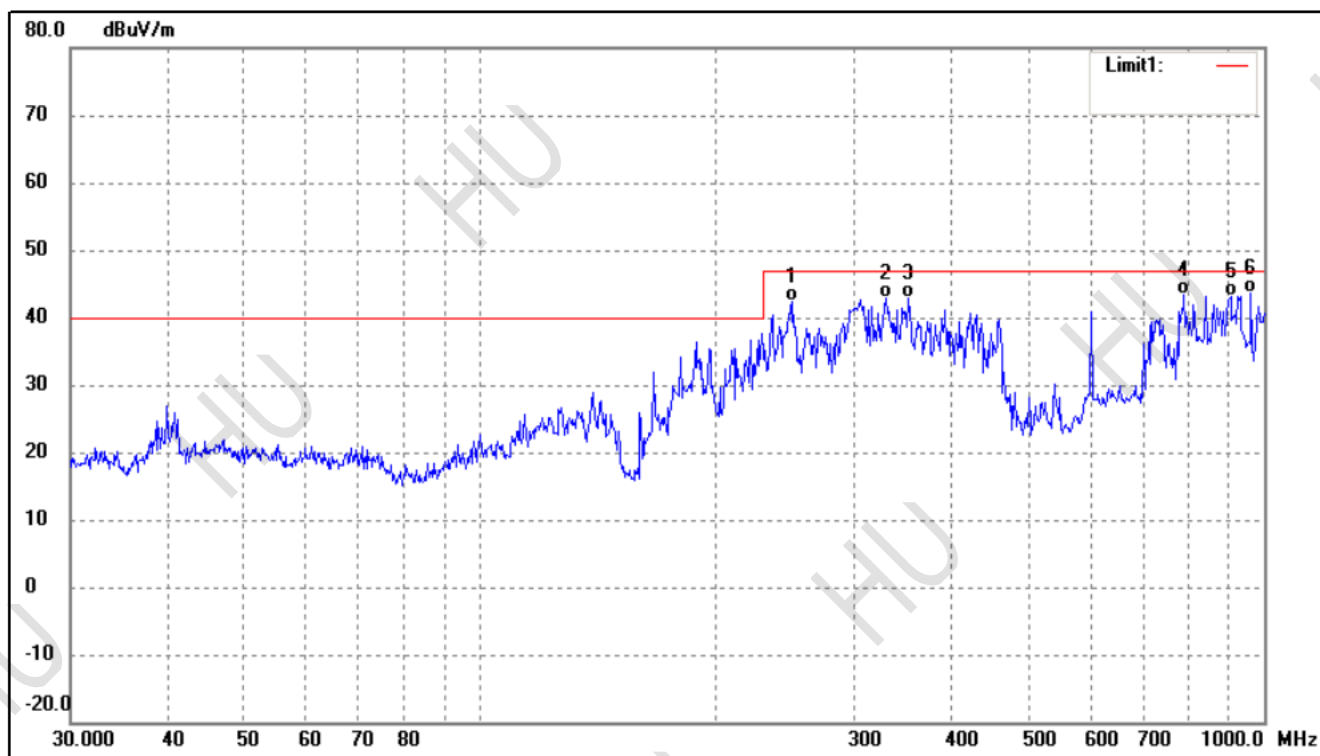
-3.11 dB at 962.1622 MHz in the Vertical polarization, 30 MHz to 1 GHz, 3 Meters

Test mode:

TM1

Polarity:

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	250.3011	52.87	-10.49	42.38	47.00	-4.62	357	100	QP
2	329.0389	51.20	-8.34	42.86	47.00	-4.14	97	100	QP
3	351.7078	50.56	-7.60	42.96	47.00	-4.04	214	100	QP
4	790.6187	47.70	-4.43	43.27	47.00	-3.73	101	100	QP
5	906.4823	44.28	-1.10	43.18	47.00	-3.82	184	100	QP
6	962.1622	44.79	-1.06	43.73	47.00	-3.27	235	100	QP

Test mode:

TM1

Polarity:

Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	239.9874	53.66	-11.13	42.53	47.00	-4.47	231	100	QP
2	299.3158	50.56	-7.87	42.69	47.00	-4.31	90	100	QP
3	601.4265	48.86	-5.60	43.26	47.00	-3.74	85	100	QP
4	790.6187	46.90	-4.44	42.46	47.00	-4.54	97	100	QP
5	842.1295	45.91	-2.79	43.12	47.00	-3.88	203	100	QP
6	962.1622	44.95	-1.06	43.89	47.00	-3.11	313	100	QP

5. Electrostatic Discharges (ESD)

5.1 Test Procedure

Test is conducting under the description of EN 61000-4-2.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

5.2 Electrostatic Discharge Immunity Test Data

Table 1: Electrostatic Discharge Immunity (Air Discharge)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Surface	A	A	A	A	A	A	B	B	/	/
Seams	A	A	A	A	A	A	B	B	/	/

Table 2: Electrostatic Discharge Immunity (Direct Contact)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Seams	A	A	A	A	/	/	/	/	/	/

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP & VCP)

EN 61000-4-2 Test Points	Test Levels (kV)									
	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
HCP (6 Sides)	A	A	A	A	/	/	/	/	/	/
VCP (6 Sides)	A	A	A	A	/	/	/	/	/	/

Test Result: Pass

6. Continuous RF electromagnetic field Disturbances (RS)

6.1 Test Procedure

Test is conducting under the description of EN 61000-4-3, EN 61000-4-20, EN 61000-4-21.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	52%
ATM Pressure:	1010 mbar

6.2 Continuous Radiated Disturbances Test Data

Frequency step: 1% of fundamental

Dwell time: 1 second

Modulation: AM by 1kHz sine wave with 80% modulation depth

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

Spot frequencies (MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
1800	3	A	A	A	A	A	A	A	A
2600	3	A	A	A	A	A	A	A	A
3500	3	A	A	A	A	A	A	A	A
5000	3	A	A	A	A	A	A	A	A

Test Result: Pass

7. Electrical Fast Transients (EFT)

7.1 Test Procedure

Test is conducting under the description of EN 61000-4-4.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

7.2 Electrical Fast Transients Test Data

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	/	/	A	A	/	/	/	/
	L2	/	/	A	A	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1+L2	/	/	A	A	/	/	/	/
	L1 + PE	/	/	/	/	/	/	/	/
	L2 + PE	/	/	/	/	/	/	/	/
	L1+L2+PE	/	/	/	/	/	/	/	/

Test Result: Pass

8. Surges

8.1 Test Procedure

Test is conducting under the description of EN 61000-4-5.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

8.2 Surge Test Data

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	/	/	/
2	1kV	±	L-N	A	/
3	2kV	±	L-PE, N-PE	/	/
4	4kV	±	/	/	/

Test Result: Pass

9. Continuous induced RF disturbances (C/S)

9.1 Test Procedure

Test is conducting under the description of EN 61000-4-6.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

9.2 Continuous Conducted Disturbances Test Data

Sweep frequency range: 0,15 MHz to 10 MHz 3 V; 10 MHz to 30 MHz 3 V to 1 V;30 MHz to 80 MHz 1V

Frequency step: 1% of fundamental

Dwell time: 1 second

AC Port

Frequency MHz	Injected Position	Level	Observations (Performance Criterion)	Result
0.15-10	AC Mains	3Vrms	A	Pass
10-30	AC Mains	3-1Vrms	A	Pass
30-80	AC Mains	1Vrms	A	Pass

Test Result: Pass

10. Power-Frequency Magnetic Fields (PFMF)

10.1 Test Procedure

Test is conducting under the description of EN 61000-4-8.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	50%
ATM Pressure:	1011 mbar

10.2 Power-Frequency Magnetic Field Test Data

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Postion	Pass	Fail
1	1	50	X, Y, Z	A	/
2	3	50	X, Y, Z	/	/
3	10	50	X, Y, Z	/	/
X	Special	/		/	/

Test Result: Pass

EXHIBIT 1 - PRODUCT LABELING

Proposed CE Label Format

TRAVEL PLUG WITH 4 USB PORT	
Model:TC17	
Brand:	
Importer Name: XXX	
Importer Address: XXX	
HUIDONG COUNTY ZHIDA ELECTRONICS LIMITED	
SUN AU INDUSTRIAL ZONE,HUIDONG COUNTY,	
HUIZHOU CITY, GUANGDONG, CHINA	

Specifications: Text is Black in color and is justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT. The „CE“ marking must be affixed to the EUT or to its data plate. Where this is not possible or not warranted on account of the nature of the apparatus, it must be affixed to the packaging, if any, and to the accompanying documents. The „CE“ marking is allowed less than 5 mm but must clear. If the „CE“ marking is reduced or enlarged the proportions given in the above graduated drawing must be respected. The Importer name, address and Manufacturer name and address should indicate on marking label or packaging or in a document accompanying

Proposed Label Location on EUT

CE Label Location

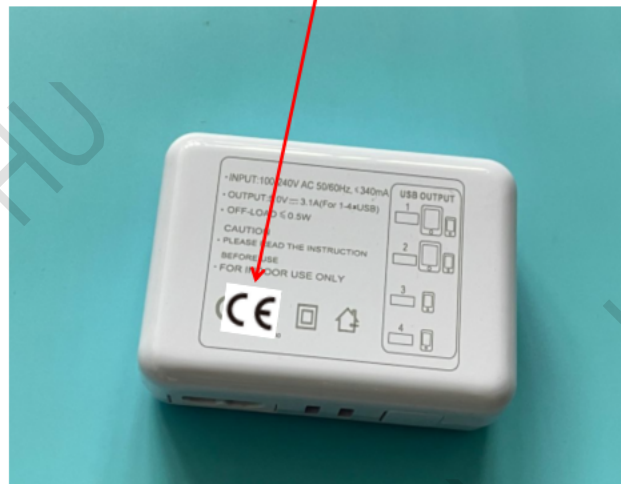
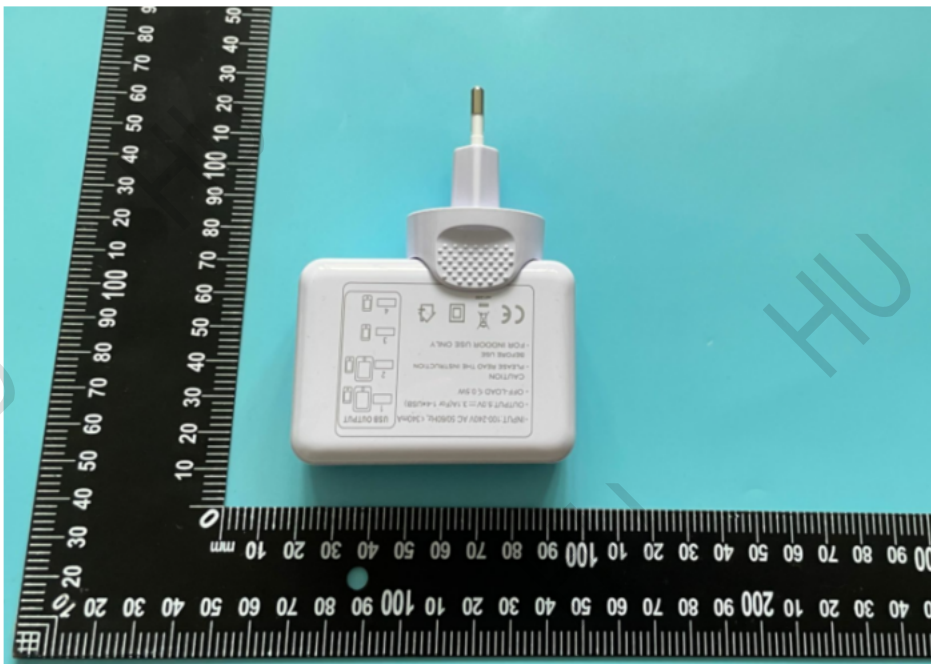


EXHIBIT 2 - EUT PHOTOGRAPHS

EUT View 1



EUT View 2



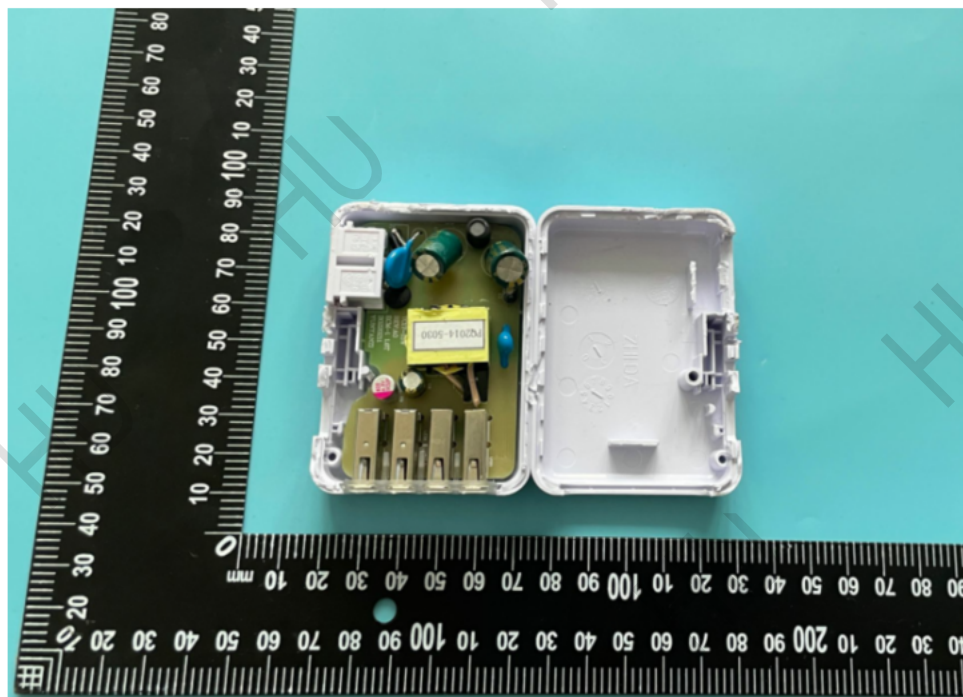
EUT View 3



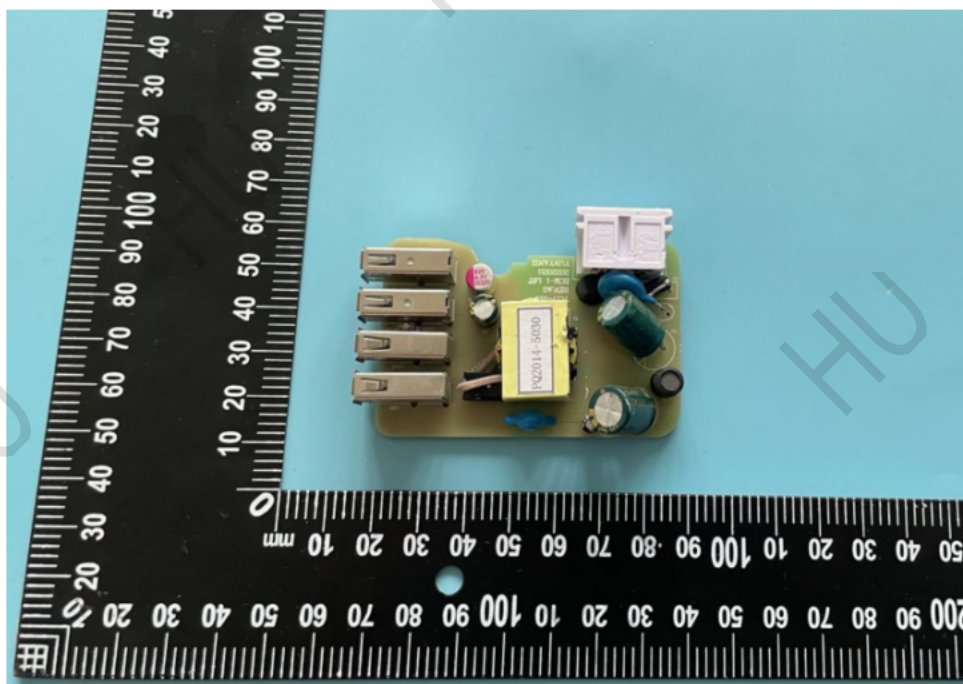
EUT View 4

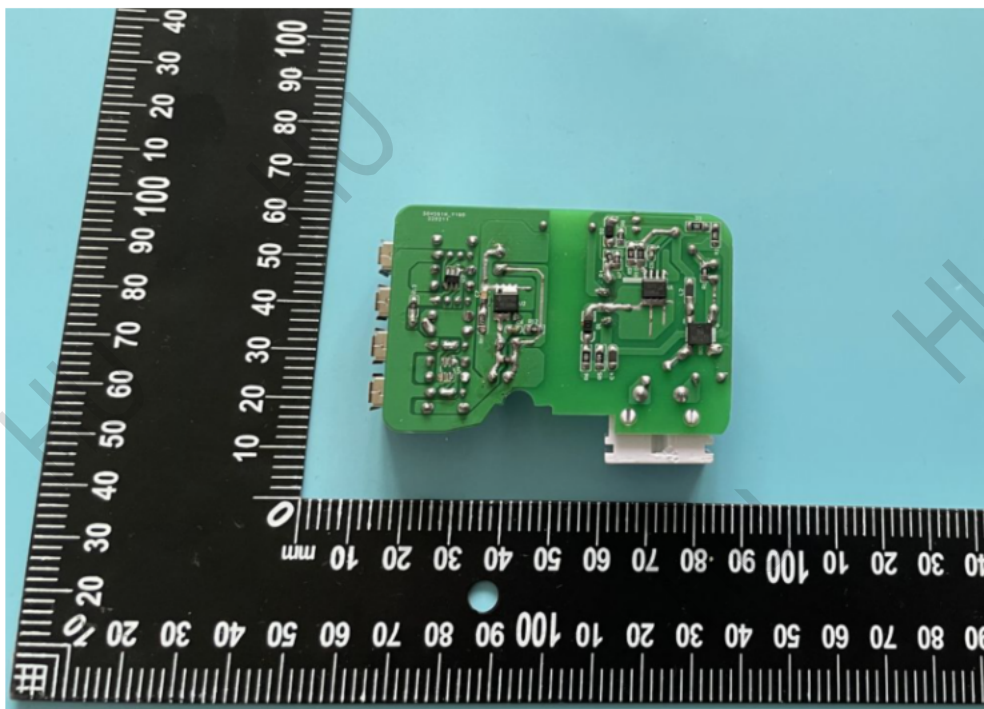


EUT View 5



EUT View 6



EUT View 7

***** END OF REPORT *****